



## GLACIER COOLERS

In 2018 Antofagasta's Innovation Board approved a proposal to test covering glaciers with removable reflective covers containing textiles to delay the accelerated melting of glaciers caused by climate change. The pilot project will start in 2019.

## CLIMATE CHANGE MANAGEMENT

The effects of climate change have become evident in Chile in recent years mainly affecting water availability in the centre and north of the country where Antofagasta Minerals' operations are located.

In 2016 the Board approved a Climate Change Standard. The standard has three main aims:

- Incorporate climate change into organisational culture.
- Consider GHG emissions in decision-making from the initial design stage of projects until closure.
- Include GHG mitigation measures, detecting opportunities at operations in electricity supply decisions and project energy efficiencies.

In 2018 Antofagasta Minerals also defined a target to reduce carbon dioxide equivalent emissions by 300,000 tonnes by 2022 compared to the baseline in 2017.

The Board is responsible for climate change issues and the corporate environmental department for its management. In addition, since 2009 we have reported our climate change management to the Carbon Disclosure Project (CDP).<sup>1</sup>

## RENEWABLE ENERGY TO REDUCE OUR GHG EMISSIONS

In 2018, 23% of Antofagasta Minerals' energy supply came from renewable energy.

At Los Pelambres, one of the world's largest copper mines, 59% of energy consumption comes from photovoltaic plants, wind or power generated by its ore conveyor belts.

As from 2018 new energy supply contracts favour sources that reduce GHG emissions. For example, the new electricity supply contract signed between Zaldívar and Colbún S.A. for 550 GWh/year will supply renewable energy from July 2020. Zaldívar will be the first Chilean mining company to use 100% renewable energy to produce copper, which will be verified by an external organisation.

Another GHG emission reduction initiative is the power increase at Centinela's thermosolar plant which uses solar energy for heating processes at its electrowinning plant.

In 2018 carbon emission intensity decreased by 17% compared to the previous year, mainly due to the combination of the northern SING and central SIC grids. Before the combination, our northern operations obtained electricity from what is now the SING subsystem in which conventional energy sources make up 79% of installed capacity. Our operations now obtain electricity from the national electric system (SEN) in which renewable energy makes up 47% of installed capacity.

### ANTOFAGASTA MINERALS' ENERGY CONSUMPTION - GJoules

	2018	2017	2016
Electricity consumption	12,513,335	11,906,112	11,538,454
Fuel consumption	11,962,226	9,491,721	9,153,704
Renewable energy consumption	23%	21%	17%

### GREENHOUSE GAS (GHG) EMISSIONS<sup>2</sup>

	2018	2017	2016
<b>SCOPE 1<sup>3</sup></b>			
Tonnes CO <sub>2</sub> equivalent	1,026,220	854,628	795,994
<b>SCOPE 2<sup>4</sup></b>			
Tonnes CO <sub>2</sub> equivalent	1,391,695	2,071,937	2,000,010
<b>TOTAL EMISSIONS (SCOPES 1 AND 2)</b>			
Tonnes CO <sub>2</sub> equivalent	2,417,915	2,926,565	2,796,004
<b>EMISSIONS INTENSITY</b>			
Tonnes CO <sub>2</sub> e/tonnes of copper produced	3.33	3.87	3.67

<sup>1</sup> Carbon Disclosure Project (CDP) is the leading organisation in the monitoring and disclosure of companies' carbon and water footprint. More information on [www.cdp.net](http://www.cdp.net)

<sup>2</sup> Figures include 100% of Zaldívar emissions although Antofagasta plc owns 50% of the mining operation.

<sup>3</sup> Scope 1: Sources of direct emissions in operations controlled by Antofagasta Minerals S.A., such as from machinery, vehicles or boilers.

<sup>4</sup> Scope 2: Indirect emissions from electricity generation activities by sources that are owned or controlled by a third party associated with the consumption of energy inputs eg electricity bought from SEN.